STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

DIVISION OF UNDERGROUND STORAGE TANKS

COMPLIANCE GUIDANCE DOCUMENT - 102

EFFECTIVE DATE - July 29, 1996
(REVISION DATE – July 19, 1999)

RE: REQUIREMENTS FOR INVENTORY CONTROL

The purpose of this guidance document is to assist the regulated community in understanding the regulatory requirements of *Rule 1200-1-15-.04(3)(a)* Inventory control. This rule states the following:

Inventory control. Product inventory control (or another test of equivalent performance) must be conducted monthly to detect a release of at least 1.0 percent of flow-through plus 130 gallons on a monthly basis in the following manner:

1. *Inventory volume measurements for petroleum inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day;*

2. *The equipment used is capable of measuring the level of petroleum over the full range of the tank's height to the nearest one-eighth of an inch;*

3. *The petroleum inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;*

4. *Deliveries are made through a drop tube that extends to within one foot of the tank bottom;*

5. *Petroleum dispensing is metered and recorded within the local standards for meter calibration or an accuracy of 6 cubic inches for every 5 gallons of petroleum withdrawn; and*

6. *The measurement of any water level in the bottom of the tank is made to the nearest one-eighth of an inch at least once a month.*

INTRODUCTION

Inventory control combined with periodic tank tightness testing is a method of release detection for USTs. Inventory control is basically an ongoing accounting system. Its objective is to balance the input and output of petroleum product being dispensed from an underground storage tank (UST) system, with the remaining product in the UST system. The sum of the difference between the bookkeeping inventory and the measured inventory for each day at the end of each month is compared to a leak check number based on one percent (1%) of total flow-through + 130 gallons

for each tank. When inventory control is used as a release detection method, it must be accompanied with a periodic tank tightness test.

Advantages

- Inventory control is economical, easily implemented, and advantageous for small tank owners and/or operators.

Disadvantages

- Accuracy of inventory control is reduced by human error, fluctuation of product level due to condensation and evaporation of product, tilt of the tank, inaccuracies of the flow-through meters, and dispensing of large quantities of product.

Inventory control can only be used until 1998 or ten years after installing a new UST system or upgrading an existing UST system, whichever is later.

REQUIREMENTS FOR INVENTORY CONTROL

Every thirty days, daily inventory data must be reconciled to determine if daily overages and/or shortages are greater than the monthly leak check. The monthly leak check for an UST system is **1.0 percent of total monthly flow-through (gallons dispensed) plus 130 gallons.** If the total overage and/or shortage for the month exceeds the monthly leak check, this may be a warning sign of a possible problem. If daily overages and/or shortages are greater than the monthly leak check for two consecutive months, the owner/operator must notify the Division within 72 hours to report a suspected release.

Inventory control must be accompanied with a periodic tank tightness test**.** The combined method of inventory control and tank tightness testing is a TEMPORARY release detection method. The combined method can only be used for 10 years after new tank installations, or for 10 years after upgrades of existing tanks, or until December 22, 1998, whichever is later. (Note: tanks that are filled by transfers of no more than 25 gallons at one time are not required to have spill/overfill devices.) After the 10 year period you must use a monthly monitoring method, such as automatic tank gauging, groundwater monitoring, vapor monitoring, interstitial monitoring, or statistical inventory reconciliation (SIR). For more information concerning these release detection methods please see Compliance Guidance Documents (CGDs)- 104, 105, 106, 107, and 108 respectively. For more information concerning tank tightness testing please see Compliance Guidance Document (CGD)- 112.

UST systems (tanks and lines) that meet performance standards (corrosion protection and spill/overfill protection) must have a tank tightness test performed at least once every five years. UST systems that do not meet performance standards must have a tank tightness test performed at least once a year.

Inventory control must be performed every day the tank is in operation. In case the facility is closed, USTs should be secured from unauthorized access.

All liquid level measuring equipment must be able to measure the product stored over the full range of the tanks height to the nearest one-eighth of an inch. If a stick is used to measure product level, then it must be graduated in one-eighth increments and the entire length must be legible.

Appropriate calibration charts for the tank must be on-site and be made available to the Division during an inspection.

The UST must be checked for water at least once every month. If more than 1 inch of water is found in the tank, it should be removed immediately, the fuel supplier should be notified, and further water checks should be conducted to ensure the tank is not releasing petroleum. Water readings must be accounted for in the monthly reconciliation.

⇒ Note: If an unexplained increase of water continues to occur, then the Division must be notified within 72 hours.

If monthly totalizers (meters) are used to determine total flow-through, then the totalizers must be calibrated at least once a year. Tank owners and/or operators are responsible for ensuring that the meters have been calibrated to meet local standards for meter calibration or an accuracy of 6 cubic inches for every 5 gallons of petroleum dispensed, whichever is more stringent. Tank owners and/or operators must maintain documentation of annual meter calibration as a part of their facility records.

All USTs must be equipped with a drop tube that extends to within one foot of the tank bottom. When using a gauging stick, product level measurements must be made through drop tube.

REPORTING AND RECORDKEEPING

If the results from any tightness testing indicate the tank and/or lines may have had a release of petroleum, then the Division must be notified within 72 hours of a confirmed release. Owners and/or operators must take immediate action to prevent any further release of the petroleum into the environment, and take immediate action to identify and mitigate fire, explosion, and vapor hazards. Owners and/or operators must repair, replace, or upgrade the UST and/or piping, and begin corrective action in accordance with *Rule 1200-1-15-.06* if the test results for the system, tank, or delivery piping indicate that a leak exists.

If monitoring results from the inventory control (two consecutive months) indicate the UST system may have had a release, then the owner and/or operator shall notify the Division within 72 hours and begin release investigation and confirmation steps in accordance with *Rule 1200-1-15-.05(3).* If the monitoring device is determined to be defective and a suspected release was not reported to the Division, the owner/operator shall document that the device was defective and the actions taken for correction. This documentation shall also include additional monitoring results.

The last twelve months of inventory control records must be maintained. Inventory control records must show each day's inventory data, be reconciled monthly, and made available for inspection by the Division. The most recent tightness test results must be maintained.

Records of all calibration, maintenance, and repairs of release detection equipment permanently located on-site must be maintained for at least one year after the servicing work is completed. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for five (5) years from the date of installation. Records of UST system repairs must be maintained for the life of the UST system

ADDITIONAL INFORMATION

Doing Inventory Control Right For Underground Storage Tanks, November 1993, EPA Publication Number: 510-B-93-004

A free copy of this publication can be obtained by contacting any Division Field Office or at the Division's Nashville Central Office, phone (615) 532-0945. This publication also contains a daily inventory worksheet and a monthly inventory record for your use.